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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/667,268

09/19/2003

Steven J. Fiore

D/A3196

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11/02/2004

PATENT DOCUMENTATION CENTER

XEROX CORPORATION

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ROCHESTER, NY 14644

EXAMINER

LEE, PETER

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/667,268

Applicant(s)

FIORE ET AL.

Examiner

Peter Lee

Art Unit

2852

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities:

The “slot 86” as mentioned in the application page 7 paragraphs [0028] and [0030] are not found in the drawings. It is believed that the “slot 86” is actually referring to the slot 83 as seen in Figs. 2 and 3. It is suggested to change part “86” in the specifications to --83-- as referred to in the drawings.

The “slot 86” as mentioned on page 7 paragraph [0030] and said to be in Figure 4 is not found in the said figure. It is believed that the portion “slot 86” should read as --slot 85--.

Appropriate correction is required.

### ***Claim Objections***

2. Claims 9 and 13 are objected to because of the following informalities:

Claim 9 is seen to be dependent on itself. It is believed claim 9 is meant to depend upon claim 8, and will be treated as thus from hereon. If this is truly the case, replace “...method of claim 9...” with -- ...method of claim 8...-- .

Claim 13 is a word for word copy of claim 5. It is suggested that the later claim 13 be removed from the application.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5- 8, and 13-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US pn 6185394). Lee teaches a method for preventing the shortening of the lifetime of a photoreceptor belt by adjusting the tension of the photoreceptor belt in a printing apparatus (col. 2 lines 40-55) (ie. extending/increasing the lifetime of the photoreceptor belt). It is also seen that the photoreceptor belt taught by Lee is of the endless belt type as seen in Fig. 1. The method taught comprises of a control mechanism operated in three modes depending on the sensing mechanism (Fig. 5 part 470) used to control the driving motor that adjusts the photoreceptor belt tension automatically (Fig. 5 part 460) (ie. tension/de-tension photoreceptor belt automatically). The first normal print mode is used for regular printing operations and ensure that the required printing tension is applied to the photoreceptor belt (col. 7 lines 19-34) (ie. tensioning the belt to an operational tension). The second mode is a loosened tension mode activated due to the suspension of the printing operation (col. 7 lines 35-55) (ie. belt is de-tensioned to a reduced tension that is greater than zero but less than full operating tension); Lee teaches that during such a loosened tension mode, the photoreceptor belt is not loosened enough for the belt to contact any of the surrounding units (col. 5 lines 44-48) (ie. reduced tension is sufficient to prevent the surface of belt from contacting other components).

Lee teaches a tension adjusting (col. 6 lines 35-67) device using a driving roller and backup roller (Fig. 1 parts 20 and 30 respectively) to wrap the photoreceptor belt around for support. Lee also teaches the tension adjusting device having a main frame (Fig. 5 part 1) (ie. support for belt), a tension roller (Fig. 5 part 40) (ie. tensioning member), and an auxiliary frame (fig. 5 part 410) (ie. biasing means) having springs attached to one end (fig. 5 part 442) (ie. spring loaded mechanism) for pushing and pulling the tension roller into and out of tension. The tension adjusting mechanism of the tension adjusting device comprises: a fixed frame (fig. 5 part 420) (ie. a frame connected to the support apparatus), a circular rotary plate (fig. 5 part 450) (ie. a cam connected to frame), a first rocking member (fig. 5 part 430a) (ie. first lever arm) having one end connected to a slot (fig. 5 part 431) and the second end connected to the said auxiliary frame (ie. first and second ends), the first rocking member is also connected to the said fixed frame by a hinge pin (fig. 5 part 421a) (ie. connected pivotally). During a belt replace mode operation, the circular rotary plate rotates clockwise, causing the rocking member (fig. 5 part 430a) to move up and rotate about the hinge (fig. 5 part 421a); as a consequence the auxiliary frame and the tension roller will be caused to move in the direction D as seen in Fig. 5 to effectively remove all of the applied tension (col. 7 lines 58-67) (ie. cam causes first lever arm to pivot about point such that biasing means no longer acts on the tensioning member).

The tension adjusting device taught by Lee also includes a second rocking member (fig. 5 part 430b) (ie. second lever arm) connected to the first rocking member by a coupling pin (fig. 5 part 451). The second rocking member mirrors the first rocking member in operation and layout as discussed above. Also, the first and second rocking members are taught to have springs (fig. 5

Art Unit: 2852

part 442) attached to the ends of the rocking members at one end (col. 6 lines 40-45) (ie. first and second lever arms engage the spring loaded mechanisms at their second end).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Rosati (US pn 4416532). Lee teaches all of the limitations pertaining to the claim from which 2 depends upon. Lee does not teach the photoreceptor belt being de-tensioned manually. Rosati teaches the use of a lever member (fig. 6 part 86; note col. 5 lines 5265), in a similar tension adjusting device, to be manually adjusted to release and increase the tension in a continuous photoconductive belt (Fig. 2 part 20). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the manually adjustable lever found in Rosati attached to the rotary plate in order to coordinate the tension adjustment in the tension adjusting device taught by Lee. One of ordinary skill in the art would have been motivated to include such a lever to simplify the image forming apparatus by ridding it of excessive mechanisms and controls that will serve the same purpose of releasing the belt tension. By simplifying the apparatus, it will result in easier access to the photoconductive belt at a time for replacement (col. 2 lines 46-57).

6. Claims 4, 9, 10, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Yu et al. (US pn 6101353). Lee teaches all of the limitations as set forth above. Lee further teaches the tension adjusting device of his invention having a mode in which printing is suspended, a belt replace mode (col. 7 lines 57-66), where all tension is released from the photoreceptor belt (ie. idle tension is zero).

Lee does not specifically teach the de-tensioned amount of the photoreceptor belt in his de-tensioning invention being at least  $1/10^{\text{th}}$  of an operational tension. Lee also doesn't teach the device going into an idle/non-printing mode after a fixed period of time.

It is Yu who teaches a similar device and method as that taught by Lee that de-tensions a photoreceptor belt from a daytime operating tension of 1.1 lbs/inch to a low of 0.28 lbs/inch during a machine off time (col. 6 lines 10-15) (ie. idle tension at least  $1/10^{\text{th}}$  of operation tension). It is Yu who further teaches a controller (Fig. 2 part 29) that operates through a clock (Fig. 2 part 24) that controls the actuation of the stepper motor (Fig. 2 part 150) that will adjust the tension in the photoreceptor belt (col. 5 lines 40-54). Yu also teaches that the controller and clock combination will de-tension the photoreceptor belt into a standby energy saving mode once all the copies have been made (col. 6 lines 44-48) (ie. automatically de-tension belt after a fixed period of time after last print job finish), and then re-tension the same belt once printing is required again (col. 5 lines 45-54) (ie. automatically increase tension in belt to operating tension). The said clock through which the controller must operate through is known to be used to precisely measure out time periods for operation.

It would have been obvious to a person of ordinary skill at the time the invention was

Art Unit: 2852

made to have the tension in a photoreceptor belt decrease to at least  $1/10^{\text{th}}$  of its operation tension as taught by Yu, in a tension adjusting device and method taught by Lee. One of ordinary skill in the art would have been motivated to have the de-tension amount of the photoreceptor belt as such because it translates to an improvement in the belt life of more than 2.3 times (note: Yu col. 6 lines 15-21).

It would have been obvious to a person of ordinary skill at the time the invention was made to have integrated the clock device as taught by Yu into a tension adjusting device taught by Lee, where the clock would be used in conjunction with a controller to adjust a tension in a photoreceptor belt according to the operational state of the overall image creating apparatus. One of ordinary skill in the art would have been motivated to include the clock in order to ensure precise time period measurements, and also to include such added features as being able to de-tension the photoreceptor belt during times where it is known the image creating apparatus will not be in use such as at the end of daily use, weekends, or non-working days (abstract2nd sentence). By de-tensioning the belt during non-operation, it is known to decrease the fatigue of the belt (col. 6 lines 46-47).

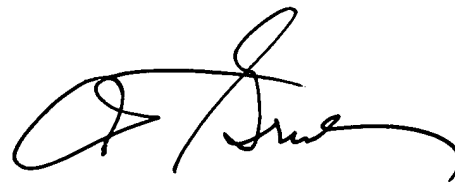


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 10/20/04

A handwritten signature in black ink, appearing to read 'A. Grimley', with a stylized flourish at the end.

Arthur T. Grimley  
Supervisory Patent Examiner  
Technology Center 2800